APPENDIX D

Mitigation Action Plan

MITIGATION ACTION PLAN

FOR THE

RAYMOND – COSMOPOLIS TRANSMISSION LINE REBUILD PROJECT

This Mitigation Action Plan (MAP) is referenced in the Finding of No Significant Impact (FONSI) for the Raymond – Cosmopolis Transmission Line Rebuild Project (Department of Energy Environmental Assessment-1425). The project involves rebuilding an existing 115-kV transmission line between the towns of Raymond and Cosmopolis in Pacific County and Grays Harbor County, Washington.

This MAP includes all of the mitigation measures recommended in the Final Environmental Assessment (EA) to mitigate adverse environmental impacts. It includes some measures that are essential to render the impacts of the proposed action not significant and other measures that will decrease impacts that did not reach the level to be considered significant.

Mitigation has and will occur throughout the entire timeframe of the project. Mitigation has occurred during the planning and design phase, and it will continue during pre-construction planning, construction, and after construction is completed (when the site is being stabilized and revegetated). The purpose of this MAP is to explain how the mitigation measures were or will be implemented. It clearly identifies the components of each mitigation measure and identifies who was or is responsible for the implementation, and at what time during the project they were or will be implemented.

A BPA contractor will rebuild this transmission line. To ensure that the contractor will implement mitigation measures, the relevant portions of this MAP will be included in the construction contract specifications (the directions to the contractor) for the project. This will obligate the contractor to implement the mitigation measures that relate to their responsibilities during construction and post-construction.

If you have general questions about the project, contact the Project Manager, Gary Beck, at 360-619-6596 (gobeck@bpa.gov). If you have any questions about the MAP, contact the Environmental Lead, Kimberly St.Hilaire, at 503-230-5361 (krsthilaire@bpa.gov). This MAP may be amended if revisions are needed due to new information or if there are any significant project changes.

PERMITS AND OTHER CONSULTATION RELATED TO MITIGATION MEASURES

BPA is in the process of obtaining required permits and consulting with state and Federal agencies. Although some of the consultation is complete, some was ongoing at the time the MAP was finalized. Table D-1 lists the types of consultation and permits that are referenced in this MAP. Although the requirements of all permits and consultation are not specifically listed in the MAP, the contractor and BPA are required to follow the terms and conditions and provisions of the various permits and consultation required by various state and Federal agencies.

Table D-1. Permits and Consultation

Permit or Consultation Type	Date Initiated	Agency Issuing Permit or Conducting Consultation	Progress as of August 1, 2003	Measures To Be Included in MAP (Location in MAP Table D-2)
Section 7 Consultation under the Endangered Species Act	Biological Evaluation submitted on 1/29/2003 and amended on 5/20/2003	US Fish and Wildlife Service (USFWS)	Consultation in progress	The MAP states that Terms and Conditions in the Biological Opinion will be followed (Fish and Wildlife, Mitigation Measure #16)
Essential Fish Habitat (EFH) Assessment Consultation	EFH Assessment submitted on 2/3/2003	National Marine Fisheries Service (NMFS or NOAA Fisheries)	Consultation Complete	NMFS stated in a letter dated March 27, 2003, that the mitigation measures within the EA are sufficient
Clean Water Act Section 404 Permit	JARPA submitted on 3/28/2003	Army Corps of Engineers (ACOE)	ACOE has requested additional information, which were submitted in July 2003	The MAP states that all provisions within the Section 404 permit will be followed (Wetlands, Mitigation Measure #3)
Clean Water Act Section 401 Water Quality Certification	JARPA submitted on 3/28/2003	WA Department of Ecology (WA DOE)	WA DOE determines if Water Quality Certification is required after the ACOE permit is issued	The MAP states that if Section 401 Certification is required, any mitigation required by WA DOE will be implemented (Water Quality, Mitigation Measure #1)
Hydraulic Project Approval (HPA)	JARPA submitted on 3/28/2003	WA Department of Fish and Wildlife	Received HPA on May 14, 2003	The MAP states that all provisions within the HPA will be followed (Wetlands, Mitigation Measure #3 and Fish and Wildlife Mitigation Measure #7)

Permit or Consultation Type	Date Initiated	Agency Issuing Permit or Conducting Consultation	Progress as of August 1, 2003	Measures To Be Included in MAP (Location in MAP Table D-2)
Clean Water Act NPDES Permit	EPA Notice of Intent (NOI) will be submitted at least 2 days prior to start of construction	Environmental Protection Agency (EPA)	Stormwater Pollution Prevention (SWPP) Plan in Draft form	The MAP states that the SWPP Plan will be developed and implemented (Water Quality, Mitigation Measure #2)
Pacific County Critical Areas Ordinance permit for wetland impacts	Letter Report detailing Shoreline impacts submitted on 3/13/2003 and JARPA submitted on 3/28/2003	Pacific County	BPA submitted additional information to Pacific County in June 2003 to determine if a permit and any mitigation are required	The MAP states that any mitigation required by Pacific County will be implemented and followed by the contractor (Wetlands, Mitigation Measure #3)
Grays Harbor and Pacific County Shoreline Substantial Development Permit	Letter Report detailing Shoreline impacts submitted on 3/13/2003 and JARPA submitted on 3/28/2003	Grays Harbor County Pacific County	BPA met county planners in June 2003, this project may fall under shoreline exemptions	If any additional mitigation measures are needed they will be followed
Section 106 Consultation (Historic Properties)	Submitted Cultural Resources Report to the State Historic Preservation Office (SHPO) on 12/27/2003	WA Office of Archaeology and Historic Preservation (SHPO)	SHPO concurred that there are No Historic Properties Affected on 12/27/2003	The SHPO stated in a letter dated December 27, 2002 that no additional mitigation measures are required beyond what is in the EA.

NATIVE SEED MIX

In the MAP table that follows, reference is made to a native grass seed mix that will be used for revegetating disturbed areas, at a seeding rate of 50 pounds per acre:

- Blue wild rye *(Elymus glaucus),* native grass, 30% by weight
- Red fescue *(Festuca rubra),* 30% by weight
- Regreen (a Trade name for *Tritium x Agropyron*), sterile wheat, 10% by weight
- Mannagrass (*Glyceria occidentalis, G. striata or G. elata* depending on availability), native grass, 10% by weight
- California brome *(Bromus carinatus),* native grass, 10% by weight.

Although one component, Regreen, is not a native species, it was included in the mix because it provides quick cover by germinating very fast. It does not survive beyond a few years because it is a sterile species and it is not a perennial species. Different species in the mix are adapted to grow in different water regimes, making the mix suitable for both wetlands and uplands.

PERSONS IMPLEMENTING PLAN

Persons in various roles within BPA and the contractor are responsible for implementation of various mitigation measures. In the MAP table (Table D-2, below), the roles of the persons responsible for the implementation of that measure are included in abbreviations after each component of the measure. For example the Project Manager is referred to in the table as the PM. The following persons will be responsible for the implementation of mitigation measures:

Project Manager (PM): The Project Manager has the ultimate responsibility for the contract (including construction specifications) and environmental performance and is responsible for budget, schedule and project compliance with environmental regulations

Design Engineer (DE): Designs the transmission line and works with the project team to site structures and other project elements, and to use construction materials and techniques that minimize adverse environmental impacts

Environmental Specialist (ES): Either the ES from the Environmental Planning Analysis group or from the Pollution Prevention and Abatement group; responsible for environmental planning and permitting, the preparation of the MAP, contractor orientation, monitoring of compliance with mitigation measures, and resolution of any issues regarding measures

Contracting Officer's Technical Representation (COTR): Includes the inspector and other BPA personnel who work with the contractor on a regular basis to ensure the contractor follows the construction specifications, which includes the relevant portions of the MAP

Road Engineer (RE): Designs and sites roads and other access and works with the project team to locate roads and use construction materials and techniques that minimize adverse environmental impacts

Public Affairs Specialist (PAS): Cooperates with other project team members to disseminate information to the public concerning the project plans and schedule

Lands Specialist (LS): Works with landowners to ensure they are informed of project activities and given the opportunity to provide input; works with landowners to achieve resolution of any issues that arise

Construction Specifications Writer (CSW): Works with project team members to write the construction specifications, the document the contractor will follow to implement the project

Archeologist (ARCH): Works with Tribes and agencies to determine if any cultural resources will be affected, designs mitigation and responds if any cultural resources are found during the course of construction

Forester (FOR): Determine which trees need to be cut to ensure the safe construction and operation of the transmission line and works with the Environmental Specialist to determine how to limit the disturbance from tree removal activities to mitigate for adverse environmental effects

BPA Olympia Region staff (BPA Region): The Olympia Region office is responsible for ongoing operation and maintenance of the transmission line, including vegetation management and any repairs or necessary maintenance activities to structures, conductor, roads and other facilities associated with the transmission line

Contractor (Contractor): Hired by BPA to build the project; works with the COTR to ensure that all contract specifications are followed

Prior to project implementation, a **Contact Information Table** will be created that lists the names of persons in these roles, issues they can address, and contact information, including alternate contacts if that person is unavailable. The contact information sheet will be distributed to all BPA project members, contractors, and Federal and state agencies with permits or other approvals/recommendations that are committed to within the MAP.

Table D-2. Mitigation Action Plan Table

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
LAND USE		
1. BPA's Project Manager will be available to meet with concerned landowners to discuss issues and concerns.	1.1. Landowners were contacted by letter and some were also contacted by phone or visited to determine what concerns they have with the proposed project (LS) 1.2. During construction, all information on any landowner contacts will be promptly routed to the project manager to address (all project members, Contractor) 1.3 If landowners raise concerns, schedule a meeting with the landowner and the appropriate team members (PM, LS)	1.1 Completed during initial design/ planning process 1.2 Inform PM of any landowner concerns within 2 business days 1.3 As needed

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
2. A proposed schedule of construction activities will be distributed to all potentially affected landowners along the corridor so they know when they might experience construction-related disruptions.	2.1 Develop a list of activities with a potential affect on landowners and schedule of those activities (Contractor) 2.2 Distribute schedule to landowners (PAS) 2.3 Update schedule and redistribute (Contractor, PAS)	2.1 Prior to construction 2.2 Prior to construction, give two weeks notice where possible 2.3 As needed during construction
3. BPA will prepare a notice about construction activities and a proposed schedule, for posting on the WSDOT Traffic Advisory.	3.1 Prepare notice and schedule and update as needed (COTR, Contractor) 3.2 Deliver notice to WSDOT for posting (COTR, PAS)	3.1 Within appropriate time frame for timely posting 3.2 As needed
4. Traffic safety signs and flaggers will be used to inform motorists and manage traffic during construction activities along Highway 101.	4.1 The contractor will develop a Traffic Safety Plan that will address when signs and flaggers are needed and the Plan will be approved by BPA (PM, COTR, Contractor) 4.2 Ensure that the contractors use signs and flaggers when required (COTR)	4.1 Prior to and during construction 4.2 During construction
5. Construction activities and equipment will be kept clear of residential driveways as much as possible.	Covered in Land Use, Mitigation Measure 2	
6. Disturbed areas will be revegetated with native seed, except in residential areas, where property owners will be consulted on plant selection.	6.1 Consult landowners on plant selection (LS) 6.2 Reseed using the seed mix and seeding rate described in the text section above this table (COTR, Contractor)	6.1 Prior to construction 6.2 Seed disturbed areas between September 1 and 15 and any areas disturbed after that will be reseeded before the end of construction
GEOLOGY AND SOILS		
1. Existing structures within 50 feet of waterways will be cut at the ground surface rather than cut 2 feet below the ground surface, to minimize soil disturbance.	1.1 Identify these structures in the field and in the construction specifications (COTR, ES) 1.2 Site meeting to discuss removal methods (COTR, ES, Contractor) 1.3 Ensure that the contractor cuts appropriate structures (COTR)	1.1 Prior to construction 1.2 Prior to construction 1.3 During construction

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
2. Structures and new roads will be located as far as possible from nearby streams and wetlands.	2.1 During the design phase, wetland boundaries and streams were located and mapped relative to proposed structures (ES) 2.2 Most proposed structure locations were visited at least twice and impacts to water features and buffer areas were avoided or minimized by locating proposed structures as far away as possible (DE, ES)	2.1 Wetland delineation/ determination completed 2.2 Completed during design phase
3. Culverts, cross-drains, and water bars will be spaced and sized properly.	3.1 During road design, the guidelines for spacing and sizing of water structures in the WA Forest Practices Act Board Manual, Section 3 were followed (RE) 3.2 The Access Road Summary, which lists all proposed road work and the location, identifies specific locations requiring water structures (RE) 3.3 Prior to constructing water structures, verify in the field that their location and spacing is adequate to minimize drainage from the road surface directly into water features, including wetlands (COTR)	3.1 Completed during design phase 3.2 Completed during design phase 3.3 During construction
4. To minimize erosion, sedimentation, and soil compaction as much work as possible will be conducted during the dry season, when stream flow, rainfall, and runoff are low.	4.1 Project activities will occur during April through November, 2004, with most of the major construction activities occurring during the drier portions of the year, from June though early October (PM)	4.1 The proposed schedule is April through November, 2004
5. In disturbed areas, mechanical barriers to erosion, as specified in the Storm Water and Pollution Prevention (SWPP) Plan, will be used.	5.1 In advance of any ground disturbing or construction activities, BPA's Contractor and subcontractors will follow BPA, state, and/or local jurisdictional Best Management Practices (BMPs) to evaluate and design a site specific Erosion and Sediment Control (ESC) Plan for that location and/or activity to prevent impacts to waterways and wetlands (ES, Contractor) 5.2 No construction activity will be permitted until required protective measures associated with that work are installed (ES, COTR, Contractor) 5.3 All on-site erosion and sediment control measures will be inspected at least once every seven days and within 24 hours after any storm event of greater than 0.5 inches (ES, COTR, Contractor)	5.1 Prior to construction 5.2 Prior to construction 5.3 During construction

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
	5.4 Damaged or inadequate erosion and sediment control measures will be repaired within 24 hours of the inspection (ES, COTR, Contractor)	5.4 During and after construction
	5.5 Once sites are stabilized and BPA has conducted a final inspection, any materials used as temporary erosion and sediment control devices will be removed and disposed of (ES, COTR, Contractor)	5.5 After construction, once the site is stabilized
6. Vegetative buffers will be retained where possible to prevent sediment from eroding into water bodies.	6.1 On project maps used by BPA and contractors, depict buffers 50-feet from all wetland boundaries and streams (ES)	6.1 When maps are developed, prior to construction
	6.2 Designated wetland and stream buffers will be conspicuously flagged or staked (using plastic ribbon, carsonite stakes, or paint, as appropriate) to designate areas where vegetation should be cut or crushed, rather than removed through grading or uprooting, where possible (ES)	6.2 Prior to construction
	6.3 Site meeting to view representative examples of buffer markings (ES, COTR, Contractor)	6.3 Prior to construction
	6.4 Ensure that vehicles or construction equipment do not enter into wetland and stream buffers, except in the designated area where construction activities occur or as needed for access (COTR)	6.4 Prior to construction
7. Disturbed areas will be revegetated with native seed.	7.1 Reseed using the seed mix and seeding rate described in the text section of this MAP above this table (COTR, Contractor)	7.1 Areas disturbed before September 1 will be seeded by September 15 and any areas disturbed after that will be reseeded before the end of construction
8. After construction, access roads, culverts, and other facilities will be inspected and maintained to ensure proper function and nominal erosion levels.	8.1 Conduct post-construction monitoring of roads, culverts, facilities and provide maintenance as needed (COTR, ES, Contractor)	8.1 Within 1 month of the end of the construction activities and again in the spring of 2005
	8.2 Inspect roads and culverts on an annual basis, and maintain them on an as-needed basis (BPA Region)	8.2 After construction, at least once per year, during spring, summer, or fall

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
9. Revegetation work and sites will be inspected to verify adequate growth; implement contingency measures as needed.	9.1 A qualified person will inspect revegetation sites to determine if seeds are germinating and can be expected to attain the areal coverage specified in the SWPP Plan (70% of the natural vegetative cover for that area at final stabilization) (ES, COTR, Contractor) 9.2 If a determination is made that an area is unlikely to attain the coverage needed for final stabilization, reseed all areas that have inadequate growth (ES, Contractor)	9.1 Follow the inspection schedule in the SWPP, which mandates inspection on a regular basis until final stabilization is achieved 9.2 As needed and inspect areas reseeded on a regular basis until final stabilization is achieved
VEGETATION		
1. Use existing road systems, where possible, to access structure locations.	1.1 During project planning, design the project to use existing roads as much as possible in order to eliminate the need to construct additional roads (DE, RE, PM, LS, ES) 1.2 Contractors will be required to use only designated roads or request approval to use alternate access (COTR, ES, Contractor)	1.1 Completed during design phase 1.2 During construction
2. Limit disturbance of native plant communities to the minimum necessary.	2.1 Most proposed structures will be located close to existing structures (within 10 feet), to keep disturbance in an area that has been previously disturbed by construction and maintenance activities; in some cases the proposed structures will be located further than 10 feet from the existing location to avoid sensitive environmental resources (DE, ES) 2.2 Use designated access roads unless this is not feasible due to an engineering or environmental constraint (DE, ES, Contractor) (Also covered in Geology and Soils, Mitigation Measure 6)	2.1 Completed during design phase 2.2 During construction
3. Develop and implement a noxious-weed control plan to minimize the introduction and broadcast of weed seeds, which will be submitted to the county weed control boards specialists for recommendations.	3.1 Submit Plan (Components 3.2 to 3.9 that follow) to County Weed Control Board Specialists for recommendations (ES) 3.2 Conduct a baseline weed survey (Survey of Undesirable Plants) prior to conducting any construction activities (LS) 3.3 Provide a copy of the Survey of Undesirable Plants to the Contractor, which includes maps of their locations (LS)	3.1 Prior to construction 3.2 Completed in 2002 3.3 Prior to construction

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
	3.4 The contractor must certify in writing that all vehicles, equipment, and machinery are free of all weeds including seeds before moving the equipment into the construction area (COTR, Contractor)	3.4 Prior to and during construction
	3.5 Only weed free materials, or inert materials will be used for mulching and for erosion control (ES, COTR, Contractor)	3.5 Prior to and during construction
	3.6 Minimize disturbance to existing vegetation to prevent the colonization of disturbed areas by weed species (COTR, Contractor)	3.6 During construction
	3.7 Reseed disturbed areas with native seed mix (COTR, Contractor)	3.7 During and after construction (see Geology and Soils, Measure 7)
	3.8 Ensure that adequate cover (at least 70% of natural coverage for that area) by newly planted seed will be achieved before final stabilization, verified through monitoring) or implement contingency plan to ensure adequate cover of disturbed areas (ES, COTR, Contractor)	3.8 After construction (See Geology and Soils, Measure 9)
	3.9 Monitor the right-of-way for new invasions or expansion of the existing weed populations, solicit information from Weed Control Boards, and develop and implement control measures if needed (BPA Region)	3.9 On an annual basis after construction
	3.10 As part of ongoing vegetation management encourage the growth of plant community of low growing herbaceous and shrubby species within the ROW, including natives or non-invasive species, to discourage weed germination, survival, and spread (BPA Region)	3.10 After construction
4. Revegetate disturbed areas with native seed	Covered in Geology and Soils, Mitigation Measure 7	
5. Inspect revegetation work and sites to verify adequate growth and implement contingency measures as needed.	Covered in Geology and Soils, Mitigation Measure 9	

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
FISH AND WILDLIFE		
1. When working in or next to water bodies, disturbance will be limited to the minimum necessary.	1.1 Designated 50-foot buffers along fish-bearing streams and wetland buffers will be conspicuously flagged or staked (using plastic ribbon, carsonite stakes, or paint, as appropriate) (ES) 1.2 Entry into wetlands and streams is only permitted if authorized by permit and in wetland and stream buffer areas (50-foot on either side), entry is only permitted if necessary for construction (COTR, Contractor) (Also covered in Geology and Soils, Mitigation Measures 1, 5, and 6)	1.1 Prior to construction 1.2 During construction
2. Existing structures within 50 feet of waterways will be cut at the ground surface rather than cut 2 feet below the ground surface, to minimize soil disturbance.	Covered in Geology and Soils, Mitigation Measure 1	
3. Removal of forest habitat will be limited to those trees that would interfere with transmission lines or those cut to create access roads.	3.1 During design, map all areas where forest would need to be removed on project maps as they are identified and look for ways to avoid or limit as much tree removal as possible (FOR, DE, ES) 3.2 Mark individual trees that are to be removed and the back line of all cut areas with paint (FOR) 3.4 On project maps for BPA and contractor use, depict all tree removal areas and list cut areas in the construction specifications (FOR, CSW) 3.5 Site meeting to go over the location and marking of tree removal areas, including all tree markings and what they mean (FOR, COTR, Contractor) 3.6 Ensure that contractors cut only trees identified as to be cut within the contract (COTR)	3.1 Completed during design phase 3.2 Prior to construction 3.3 Prior to construction 3.4 Before construction 3.5 During construction
4. Existing structures located within 50-feet of fish-bearing streams will be cut off at ground level to minimize ground disturbance.	Covered in Fish and Wildlife, Mitigation Measure 2	

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
5. Disturbed areas will be revegetated with native seed.	Covered in Geology and Soils, Mitigation Measure 7	
6. Tensioning sites will not be located within 50 feet of streams or wetlands and within 100-year floodplains.	6.1 On project maps (for contractor use), depict a 50-foot buffer on either side of wetlands and streams, and the boundaries of the 100-year floodplains boundaries (ES) 6.2 Include tensioning site restrictions in construction specifications (CSW) 6.3 Contractor will be required to obtain approval for each tensioning site location (COTR)	6.1 When maps are developed, prior to construction 6.2 Prior to construction 6.3 During construction
7. Mitigation measures required by WDFW will be followed when working in streams.	7.1 Obtain Hydraulic Project Approval (HPA) from WDFW (ES) 7.2 Provide copies of HPA to contractors who must follow all provisions within the HPA (ES, COTR) 7.3 Site meeting to go over provisions within the HPA at all covered sites (COTR, ES, Contractor, invite WDFW habitat biologist to attend) 7.4 Notify WDFW habitat biologist when in-stream work will commence (COTR, Contractor) 7.5 Invite WDFW habitat biologist to view sites near the completion of instream work to ensure compliance with all conditions (COTR, ES) 7.6 Conduct site protection/revegetation required by the HPA (ES, COTR, Contractor)	7.1 The project HPA was issued by WDFW on May 14, 2003 (Log No. ST-F6006-01) 7.2 Prior to conducting any instream work 7.3 Prior to conducting any instream work 7.4 Notify at least 3 business days prior to commencing work 7.5 When instream work is nearly completed but contractor is still working on-site 7.6 During construction (site protection, as needed) and after instream work is completed (site protection within 7 days, revegetation within one year)

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
8. No structure construction will be carried out within 75 yards of the boundary of **OCCUPIED marbled murrelet habitat** until after September 15. AND 9. Instream work and other roadwork within 75 yards of **OCCUPIED marbled murrelet habitat** will not commence until after August 5.	8.1 On project maps for contractor and BPA use, depict the 75-yard construction buffer around occupied marbled murrelet sites (ES) 8.2 Construction specifications will contain a written description of the restricted areas by structure number and the specific timing restrictions (CSW, ES) 8.3 Attend contractor construction meetings to go over locations of restricted area and timing of noise restrictions (ES, COTR, Contractor) 8.4 Ensure that the contractor follows timing restrictions (COTR)	8.1 As maps are developed, prior to construction 8.2 Prior to construction 8.3 During construction 8.4 During construction
10. Helicopters will not be used to string the conductor until after September 15 to avoid noise impacts to nesting marbled murrelet.	10.1. Ensure timing restrictions are adhered to (COTR)	10.1 During construction
11. Dusk-to-dawn restrictions will be in place within 0.25 mile of all **OCCUPIED AND POTENTIAL** marbled murrelet habitat stands between April 1 and September 15.	11.1 On project maps for contractor and BPA use, depict the area within the 0.25 mile buffer around all occupied or potential marbled murrelet habitat (ES) 11.2 Construction specifications will contain a written description of the restricted area by structure number and a weekly table of the time of day when work can begin and the time it must end (CSW, ES) 11.3 Attend construction meetings with contractor to go over locations of restricted areas and timing of noise restrictions (ES, COTR, Contractor) 11.4 Ensure noise restrictions are adhered to (COTR)	11.1 As maps are developed, prior to construction 11.2 Prior to construction 11.3 During construction 11.4 During construction
12. Any trees felled within 50 feet of the Joe Creek crossing will be felled into the stream to provide large woody debris, if approved by WSDOT, the landowner.	12.1 On project maps for BPA and contractor use, depict this tree cutting area (ES) 12.2 Conspicuously mark all trees within 50 feet of Joe Creek with paint indicating they are to be left as at least 30-foot tall snags with the tops felled into the creek (FOR) 12.3 Meet on site to point out the tree marking and discuss special cutting requirements (ES, COTR, Contractor)	12.1 Prior to construction 12.2 Prior to construction 12.3 Prior to construction

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
	12.4 During tree felling, a biologist must be on-site to ensure trees are properly felled to ensure stream channel is not damaged or blocked (COTR, ES) 12.5 Invite WDFW habitat biologist to view tree felling to ensure fish habitat concerns are addressed (ES) 12.6 After tree felling, inspect area to ensure there are no blockages or problems resulting from the large woody debris (ES, COTR)	12.4 During construction, COTR will arrange schedule with biologist 12.5 During construction 12.6 Within one month after tree felling
13. The five danger trees cut within 50 to 110 feet of the Joe Creek tributary (between Structures 92 to 94) will be cut as snags but the tops will not be felled toward the creek to avoid damaging the remaining trees in the riparian buffer.	13.1 On project maps for BPA and contractor use), depict the area of the individual danger trees as polygons (ES) 13.2 Mark the danger trees with paint to identify them as trees to be left as snags (FOR) 13.3 List these trees and special cutting requirements in the construction specifications (CSW, FOR) 13.4 Meet on site to point out the marking and discuss the special cutting requirements (ES, COTR, Contractor) 13.5 Ensure that these are the only trees cut beyond the back line in this area (COTR)	13.1 Prior to construction 13.2 Prior to construction 13.3 Prior to construction 13.4 During construction 13.5 During construction
14. The riparian area within 50 feet of Joe Creek will be replanted with native, low-growing shrubs, if planting spots can be created safely.	14.1 Obtain WDFW recommendations on appropriate shrub species to be planted (ES) 14.2 Inform the planting crew to create planting spots and replant, if possible to do so safely (FOR, COTR)	14.1 Prior to construction 14.2 After construction
15. Any trees felled within 50 feet of the Little North River tributary between Structures 123 and 124 will be cut as snags and the tops felled into the riparian area.	15.1 On project maps for BPA and contractor use depict this tree cutting area (ES) 15.2 Conspicuously mark all trees within 50 feet of the creek with paint indicating they are to left as at least 30-foot tall snags with the tops felled into the creek (FOR) 15.3 During tree felling, a biologist must be on-site to ensure trees are properly felled to ensure the stream channel is not damaged or blocked (COTR, ES) 15.4 Invite the WDFW habitat biologist to view tree felling to ensure fish habitat concerns are addressed (ES)	15.1 Prior to construction 15.2 Prior to construction 15.3 During construction, COTR must arrange schedule with biologist 15.4 During construction

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
16. A Biological Evaluation has been prepared as required under the Endangered Species Act. It provides detailed actions to reduce or eliminate impacts on listed species. If an incidental take permit is issued, any terms and conditions will be implemented.	16.1 Consult with the US Fish and Wildlife Service under Section 7 of the Endangered Species Act on the impacts to listed species and obtain a Biological Opinion (ES) 16.2 Provide project team members and the contractor with a copy of the Biological Opinion and go over the Terms and Conditions at a pre-construction meeting (ES, COTR) 16.3 Ensure the contractor follows the Terms and Conditions in the Biological Opinion (COTR)	16.1 In progress 16.2 Prior to construction 16.3 During construction
WATER QUALITY		
1. An environmental specialist will meet with contractors and inspectors in the field to visit selected wetlands and waterways near or within construction areas to review avoidance and mitigation measures and any permit requirements.	1.1 Determine which wetlands are near or within construction sites (ES) 1.2 Meet on site to discuss restrictions while working near waterways and wetlands, including mapping, marking, and permit conditions and protocol to follow if flagging/staking is inadvertently removed or missing (ES, COTR, Contractor) 1.3 If Section 401 Certification is required (Clean Water Act), any mitigation required by WA Department of Ecology will be implemented (ES, COTR)	1.1 Prior to construction 1.2 Prior to construction 1.3 Prior to, during, and after construction, as required
2. A Stormwater Pollution Prevention (SWPP) Plan will be prepared and implemented, addressing measures to reduce erosion and runoff and stabilize disturbed areas.	2.1 The SWPP Plan will meet the requirements of the U.S. EPA General Permit of the NPDES permitting program to control stormwater pollution associated with construction activities (ES, Contractor) 2.2 The SWPP Plan will address the project-specific erosion and sediment control measures that the contractor must implement (COTR, Contractor) 2.3 Ensure contractor implements the SWPP (COTR)	2.1 Prior to construction 2.2 During construction 2.3 During construction
3. Existing structures within 50 feet of waterways will be cut at the ground surface rather than cut 2 feet below the ground surface, to minimize soil disturbance.	Covered in Fish and Wildlife, Mitigation Measure 2	

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
4. When working in or near water bodies and wetlands (buffer areas), disturbance will be kept to the minimum necessary.	Covered in Soils and Geology, Mitigation Measure 6	
5. Vegetative buffers will be retained where possible to prevent sedimentation into water bodies.	Covered in Soils and Geology, Mitigation Measure 6	
6. To minimize erosion, sedimentation, and soil compaction, as much work as possible will be conducted during the dry season, when stream flow, rainfall, and runoff are low.	Covered in Soils and Geology, Mitigation Measure 4	
7. No construction vehicles and equipment will be placed within 50 feet of any stream or wetland unless it is authorized by a permit or is on an existing permanent or temporary road constructed for access to the site.	Covered in Fish and Wildlife, Mitigation Measure 1	
8. Tensioning sites will not be located within 50 feet of streams, wetlands, or floodplains.	Covered in Fish and Wildlife, Mitigation Measure 8	
9. Roads and structures will be located to avoid wetlands whenever possible.	Covered in Soils and Geology, Mitigation Measure 2	
10. Roads will be designed and constructed to minimize drainage from the road surface directly into water features, including wetlands.	Covered in Soils and Geology, Mitigation Measure 3	
11. Mitigation measures required by WDFW will be followed when conducting instream work.	Covered in Fish and Wildlife, Mitigation Measure 7	

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
12. The riparian area within 50 feet of the Joe Creek crossing where riparian trees will be cut as snags and the tops felled into the creek will be replanted with native, low-growing shrubs, assuming planting spots are present and can be safely accessed within the woody debris felled into this area.	Covered in Fish and Wildlife, Mitigation Measure 12	
13. A Spill Prevention Control and Countermeasure (SPCC) Plan will be developed and implemented to minimize the potential for spills of hazardous material.	13.1 As part of the Stormwater Pollution Prevention (SWPP) Plan, a Spill Prevention and Response section will be prepared to address petroleum and hazardous materials handling and management procedures for this project; the spill plan will also meets the State of Washington requirements in Washington Administrative Code (WAC) Chapter 173-181, which specify the spill response, cleanup, and disposal requirements of oil (ES, Contractor) 13.2 The spill plan will be modified to include all hazardous substances (including oil and other petroleum products) associated with the scope of work (Contractor) 13.3 Ensure that the provisions within the spill plan are followed during construction (COTR)	13.1 Prior to Construction 13.2 Prior to and during construction 13.3 During construction
14. Machinery will be refueled and stored at least 200 feet from wetlands and waterways and will be inspected regularly for leaks.	14.1 Tanks and equipment containing oil, fuel or chemicals shall be checked regularly for drips or leaks and shall be maintained to prevent spills onto the ground or into State waters (Contractor, COTR) 14.2 All equipment fueling operations shall utilize pumps and funnels and absorbent pads; fueling shall not take place within 200 feet of natural or manmade drainage conveyance including ditches, catch basins, ponds, wetlands, and pipes; all fueling shall be restricted to designated fueling areas (Contractor, COTR)	14.1 Prior to Construction 14.2 During construction

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
WETLANDS		
1. Roads and structures will be located to avoid wetlands and streams whenever possible.	Covered in Water Quality, Mitigation Measure 9	
2. Any construction activities within wetlands will be designed and implemented to minimize impacts, and BPA will coordinate with the Army Corps of Engineers (ACOE) to obtain a permit for any fill placed in wetlands and comply with any required mitigation identified by the ACOE.	Design is covered in Wetlands, Mitigation Measure 9 and implementation is covered in the following text: 2.1 Mitigation measures are included in the Section 404 permit application submitted to the Army Corps of Engineers, including removing any material excavated, minimizing work areas, and revegetation of disturbed wetland areas (ES) 2.2 Ensure that all Section 404 permit requirements are followed by the contractor (COTR)	2.1 Completed in submitted permit application 2.2 During construction
3. An environmental specialist will meet with contractors and inspectors in the field to visit wetlands and waterways near or within construction areas to go over avoidance and mitigation measures and any permit requirements.	3.1 Meet at each wetland and waterway work site covered by state or Federal permits to discuss requirements for work in wetlands, including all permit conditions and provisions (Clean Water Act Section 404 permit, HPA, and any mitigation required by Pacific County) and avoidance of wetland buffers, where possible (ES, COTR, Contractor)	3.1 Prior to conducting any work in wetlands
4. Wetland boundaries in the vicinity of construction areas will be flagged or staked so wetlands and streams can be avoided.	Covered in Water Quality, Mitigation Measure 4	
5. When working next to wetlands (buffer areas) and water bodies, disturbance will be limited to the minimum necessary. AND 6. No machinery, construction vehicles and equipment will be placed within 50 feet of any stream or wetland unless it is authorized by a permit or is on an existing permanent or temporary road constructed for access to the site.	Covered in Water Quality, Mitigation Measure 4	

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
7. Tensioning sites will not be located within 50 feet of wetlands.	Covered in Fish and Wildlife, Mitigation Measure 8	
8. Machinery will be refueled and stored at least 200 feet from wetlands and waterways and inspected regularly for leaks.	Covered in Water Quality, Mitigation Measure 14	
9. Mitigation measures required by WDFW will be used when conducting instream work.	Covered in Fish and Wildlife, Mitigation Measure 7	
10. Erosion control measures to avoid sedimentation of wetlands and streams will be used.	10.1 The contractor will evaluate site conditions and design a site specific erosion and sediment control (ESC) plan, using the BPA, state and/or local jurisdictional BMPs, subject to BPA approval (Contractor, ES, COTR) 10.2 No construction activity will be permitted without prior completion of protective measures associated with that work (COTR) 10.3 The contractor will inspect all on-site erosion and sediment control measures at least once every seven days and within 24 hours after any storm event of greater than 0.5 inches; damaged or inadequate erosion and sediment control measures will be repaired within 24 hours of the inspection (Contractor, ES, COTR)	10.1 Prior to any ground disturbing or construction activities 10.2 Prior to and during construction 10.3 During and after construction
11. When temporary roads are built in wetlands, contractors will underlay temporary fill with geotextile fabric, remove all fill, and revegetate according to any permits.	11.1 The Joint Aquatic Permit Application (JARPA) contains a plan view, section view, and mitigation measures for temporary fill construction and these areas are listed in the Access Road Summary (RE, ES) 11.2 Ensure contractor fulfills all permit conditions related to temporary fill sites (COTR)	11.1 Completed during design phase 11.2 During construction

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
12. When holes are excavated for structures in wetlands, contractors will avoid deposit of excavated material into wetlands by placing geotextile fabric around the excavation site, removing all excavated material from the wetland, and stabilizing it in an upland area	12.1 The Joint Aquatic Permit Application (JARPA) includes removing any material excavated from wetlands to an upland area as mitigation, so this will be a requirement of the Section 404 permit (Clean Water Act) from the Army Corps of Engineers (ES) 12.2 Ensure contractor fulfills all permit conditions related to disposal of excavated material (COTR)	12.1 Completed during design phase 12.2 During construction
13. Disturbed areas will be revegetated with native species, and specific revegetation guidelines in permits will be followed.	Covered in Geology and Soils, Mitigation Measure 7 and Wetlands, Mitigation Measure 3	
FLOODPLAINS		
1. Proposed roads and structures will be located to avoid floodplains, where possible.	1.1 Create map of floodplain boundary in relation to existing and proposed structures and roads (ES) 1.2 Relocate proposed structures outside floodplain where possible (DE, ES) 1.3 No proposed roads will be located in floodplains	1.1 Completed during design phase 1.2 Completed during design phase 1.3 Completed during design phase
2. Erosion control measures will be used to avoid sedimentation of floodplains.	2.1 BPA's Contractor and subcontractors will evaluate site conditions and design a site specific Erosion and Sediment Control (ESC) plan, using BPA, state and/or local jurisdictional Best Management Practices (BMPs); the plan will be subject to BPA approval (ES, COTR) 2.2 No construction activity will be permitted without prior completion of protective measures associated with that work (ES, COTR) 2.3 All on-site erosion and sediment control measures will be inspected at least once every seven days and within 24 hours after any storm event of greater than 0.5 inches. Damaged or inadequate erosion and sediment control measures will be repaired within 24 hours of the inspection (ES, COTR)	2.1 Prior to any ground disturbing or construction activities 2.2 Prior to and during construction 2.3 During and after construction
3. Tensioning sites will not be located in floodplains.	Covered in Fish and Wildlife, Mitigation Measure 8	

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
4. Disturbed areas will be revegetated with seed from native species.	Covered in Geology and Soils, Mitigation Measure 7	
VISUAL QUALITY		
1. Non-lustrous insulators (i.e., non-ceramic insulators) and conductors will be used.	1.1 1.1 Specify non-lustrous conductors and insulators (smaller than existing ones) in the materials order (DE)	1.1 When materials are ordered
2. Contractors will maintain construction sites free of debris.	2.1 Inspect construction sites and inform contractor if there is any unwanted material that must be removed (COTR)	2.1 During construction, on a regular basis and when construction is finished do a final inspection
3. BPA will maintain the corridor free of debris resulting from transmission line operation, maintenance, and construction activities after construction.	3.1 Inspect the right-of-way by helicopter and vehicle (BPA Region) 3.2 Report any unwanted debris to the appropriate BPA staff member and arrange for disposal (BPA Region)	3.1 Each year, three helicopter surveys and one vehicle inspection are conducted 3.2 As needed
AIR QUALITY		
1. Water trucks will be used to control dust during construction.	1.1 Perform work in a manner that minimizes the production of dust, which includes limiting vehicle speeds along dirt roads to 15 miles per hour and covering construction materials that are a source of blowing dust (COTR, Contractor) 1.2 Determine if dust is being generated on the project site and develop protocol for the use of water trucks and water as needed; do not withdraw water for dust control use from any water body in the project area, unless permitted (COTR, ES, Contractor)	1.1 During construction 1.2 As needed during construction
2. All vehicle engines will be in good operating condition to minimize exhaust emissions.	2.1 Visually check the operation of exhaust system on construction equipment to ensure they are in good operating condition and do not have obviously excessive exhaust emissions (COTR)	2.1 During construction, on a regular basis

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
SOCIOECONOMICS		
1. BPA engineers will work with industrial forest owners and other landowners to site structures and roads to minimize impacts to forestry activities.	1.1 Meet with forest landowners to determine the location of roads and structures and ways to minimize impacts (PM, LS, DE)	1.1 Prior to construction
CULTURAL RESOURCES		
1. Research was conducted to document the history and significance of the existing transmission line and presented to the Pacific County Historical Society.	1.1 A qualified, professional, archeologist conducted research and prepared written and photographic documentation meeting state standards (ES, ARCH) 1.2 Present documentation to the Pacific County Historical Society (ES)	1.1 Completed by Applied Archeological Consultants of Portland, OR in January 2003 1.2 Sent to the Historical Society in March 2003, who acknowledged receipt on April 2, 2003
2. The Pacific County Historical Society will be offered one of the existing transmission line structures for display at its new museum site.	2.1 Identify which structure is a representative structure that can be safely removed for display (DE, PM) 2.2 Notify the Historical Society Director of required safety protocol during removal of structure; the Historical Society will provide transport to the museum site (COTR)	2.1 Initially discussed in February 2003 with the Historical Society Director, continue discussions and make decision by Spring 2004 2.2 Prior to removal of structure
3. In the event that archaeological material is encountered during project construction, the BPA archaeologist will immediately be notified and work will be halted in the vicinity of the finds; BPA will immediately notify the Washington SHPO.	3.1 The contractor is required to immediately notify the COTR upon encountering any material that may be archeological material and halt work in the vicinity of the material so there is no further disturbance of the area (COTR, Contractor) 3.2 The COTR will immediately notify the BPA archeologist and request direction on how to proceed (COTR) 3.3 The BPA archeologist will immediately notify the Washington SHPO, determine how to proceed and notify the COTR when work can resume in that area (ARCH)	3.1 During construction 3.2 Immediately upon discovery (within the same business day) 3.3 Call to archeologist on the same day the archeological material is encountered, if unavailable, call down the notification list

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
HEALTH AND SAFETY		
1. Before starting construction, the contractor will prepare and maintain a safety plan in compliance with Washington requirements. The plan will be kept on-site and will detail how to manage hazardous materials such as fuel, and how to respond to emergency situations.	1.1 Review plan prepared by contractor and provide feedback and request changes if needed (COTR) 1.2 Determine where safety plan is kept on-site (COTR) 1.3 Ensure contractor maintains plan on a regular basis and as needed (COTR)	1.1 Prior to construction 1.2 Prior to construction 1.3 At a minimum, at each monthly meeting and after any incident requiring plan updates
2. During construction, the contractors will hold crew safety meetings at the start of each workday to review potential safety issues and concerns.	2.1 Ensure contractor holds safety crew meetings (COTR) 2.2 Obtain schedule of where and when crew safety meetings occur and attend as needed (COTR)	2.1 During construction 2.2 BPA personnel will attend at a minimum four times per month
3. BPA will meet with the contractor on a monthly basis to discuss safety issues.	3.1 Schedule and attend meetings (COTR, Contractor)	3.1 At a minimum, on a monthly basis
4. At the end of each workday, the contractor and subcontractors will secure the site, as much as possible, to protect equipment and the general public.	4.1 Identify potential safety hazards that require corrective action, notify contractor that steps must be taken, and ensure potential risks are minimized (COTR)	4.1 During construction
5. BPA will construct and operate the new transmission line to meet the National Electrical Safety Code (NESC).	5.1 Design the transmission line to meet or exceed NESC standards (DE, PM) 5.2 Operate and maintain the transmission line to meet NESC standards (BPA Region)	5.1 Completed during design phase 5.2 After construction, during operation

Resource Area and Mitigation Measure	Components of Mitigation Measure (Person(s) Responsible for Implementation)	Schedule (Time of Implementation)
6. If a hazardous material is discovered that could pose an immediate threat to human health or the environment, BPA requires that the contractor notify the Contracting Officer's Technical Representative (COTR) immediately and stop work in that area until given notice to continue work.	6.1 If hazardous material is encountered, the contractor is required to stop work before the conditions are disturbed, take necessary safety and health precautions, and notify the COTR (Contractor) 6.2 Upon receiving notice that a hazardous material is present, the COTR will call in an environmental specialist to characterize the nature and extent of the contamination and to determine how the work may safely be completed (ES, COTR) 6.3 Work will not proceed until measures approved by WDOE are put in place to prevent the spread of contaminated materials and protect the health and safety of workers (ES, COTR)	6.1 During construction 6.2 During construction 6.3 During construction
NOISE		
1. All construction equipment and vehicles will have muffled exhaust.	1.1 Check the exhaust system of contractor construction equipment regularly to ensure they have muffled exhaust (COTR)	1.2 During construction
2. Landowners directly impacted along the corridor will be notified prior to construction activities.	Covered under Land Use, Mitigation Measure 2	
3. Near residences, construction activities will be limited to daytime hours.	3.1 Ensure that construction activities that take place within hearing distance of residences do not begin until 1 hour after dawn and end 1 hour before sunset (COTR, Contractor)	3.1 During construction
4. If radio or television interference occurs that is caused by BPA's transmission line, measures will be taken to restore the reception to a quality as good or better than before the interference.	4.1 If BPA is notified of a problem, contact and meet with the affected landowner and determine if the problem is caused by BPA's transmission line (LS, PM) 4.2 If the problem is caused by the transmission line, determine what steps are needed to remedy the problem, and implement the solution (PM)	4.1 Respond to landowner within 2 weeks to schedule meeting 4.2 As soon as possible

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